Job Specific Environmental Awareness Training – Mechanical and Electrical Technicians

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Course Objective: Significant environmental aspects are associated with mechanical and electrical work conducted at the NSLS. This course has been designed to provide you with the job-specific information that you need know to protect the environment and to meet Laboratory and Government regulations for handling the waste streams produced by these activities. The contents of this training have been extracted from the NSLS PRM and BNL Subject Areas.

Description of Significant Environmental Aspects: Maintenance activities on accelerator systems and electrical systems in the NSLS produce four types of waste that must be controlled: RCRA[1] hazardous waste, PCB contaminated waste, universal waste and industrial waste.

Training Requirements: Supervisors are required to read this form and to take RCRA Hazardous Waste Generator training. Mechanical and electrical technicians and engineers are required to read this form.

Operational Controls:

RCRA Hazardous Waste:

- Solvents or solvent-contaminated waste (like rags);
- Corrosive (pH $\leq$ 2 or $\geq$ 12.5) waste such as Used ryd-lyme solution (unless kept for reuse) or low pH ryd-lyme rinses;
- Toxic metals such as mercury, lead and silver; materials contaminated with those metals and electrical components that contain those metals (i.e. mercury switches);
- Non-empty aerosol cans;
- PCB contaminated oil or contaminated rags and absorbents;

RCRA hazardous wastes must be containerized, labeled with a red hazardous waste label and kept in a Satellite Accumulation Area (SAA) until the job is complete, or the container is full. Then, a non-radioactive waste form shall be filled out that describes the waste, and the waste must be brought to the 90-day storage area by a staff member that has completed the Lab's RCRA Hazardous Waste Generator training. Non-empty aerosol cans shall be disposed of in the container located by the NSLS Stockroom

PCB Contaminated Waste:

- Fluid-filled capacitors and transformers manufactured prior to 1979 should be managed as PCB waste unless analysis proves otherwise.
- One klystron in building 725 contains PCB contaminated oil and is labeled as such. Any used oil from this unit must be managed as PCB waste. Any associated materials coming into contact with this oil, such as gloves, rags, or secondary containment trays also must be managed as PCB contaminated waste.

Contact a member of the ES&H staff if you identify an article that is suspected to contain PCBs. Articles known or suspected to be PCB contaminated shall be labeled with a PCB label. If identified for disposal, they shall be de-energized and containerized if leaking. The out-of-service date shall be indicated on the label. The article must be brought to the 90-day storage area by a staff member that has completed the Lab's RCRA Hazardous Waste Generator training. PCB waste must be picked up by Waste Management 30 days from the out-of-service date (or date it was first generated). There is no satellite accumulation of PCB waste. Also, the door to the 90-day storage unit must be labeled as containing PCB waste when PCB waste is placed inside.

Universal Waste:

Batteries (other than alkaline batteries, which can be disposed of in the trash) are collected by type in containers located in the 90-day area. Be sure to place your batteries in the correct container for its type. If no container is available, contact the NSLS Deputy Safety Officer.

Industrial Waste:

Industrial Waste refers to non-RCRA hazardous waste that is banned from disposal into the regular trash by State and Federal regulations. Examples are waste oil, oily rags and non-PCB oil filled capacitors.

- Oil: Collected in the waste oil drum (located near the west roll-up doors).

[1] Federal regulations for hazardous waste are contained in the Resource Conservation and Recovery Act (RCRA).

- Oily rags: Collected in a fireproof container. The contents of the container shall be bagged and identified with a green non-hazardous waste label, and brought to the 90-day Storage Area. A non-radioactive waste form shall be filled out describing the waste.
- Non-PCB Capacitors: Containerize and label with a green non-hazardous waste label, and brought to the 90-day Storage Area. A non-radioactive waste form shall be filled out describing the waste.

Miscellaneous Information**:**

- Lead scrap and solder dross shall be collected for recycling. Collect lead separately from other metals.
- Use of degreasing or other chemical products must be assessed by the ES&H Staff to determine whether they contain chemicals that will cause a waste concern.

Response to Leaks/Spills: If a spill of oil or other chemical product occurs, take prompt action to prevent it from discharging to floor drains or sinks. Any discharge to a drain or to the outdoors must be reported to the Lab emergency response number (x2222) and to the NSLS Control Room Operator (x2550). If a spill of PCB containing material occurs (blown light ballast or leaking PCB article), secure the area and call x2222 and x2550.

Your Role and Responsibility: You are responsible for the proper management of your waste and to take prompt action in the event of a spill. If you are ever in doubt regarding the proper course of action, contact your supervision or a member of the NSLS ESH Staff.

Potential Regulatory and Environmental Impacts: Mismanagement of waste can result in violations of RCRA hazardous waste regulations. Discharge of oils and other chemicals to drains can result in violations of BNL release limits. Both can ultimately result in contaminated soil or groundwater. BNL is subject to fines and penalties for such violations, and is responsible for the clean-up costs associated with any required remediation.

Pollution Prevention and Waste Minimization: Cooperate with NSLS's recycling efforts by collecting all scrap metal that you produce for recycling. Empty aerosol cans should be deposited into the dedicated empty aerosol-can recycling container (located by the NSLS Stockroom). Replacement of PCB capacitors with non-PCB containing capacitors reduces the risk of spills and mismanagement of waste. Please offer any suggestions and comments to your supervision about pollution prevention and waste minimization in order to help the NSLS reduce disposal costs and achieve waste minimization goals.

Print Name	Sign Name	Life Number	Date

Signature conveys that you have read and understand this information.

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NSLS Environmental Management Training

Background: Environmental and hazardous waste management regulations are among the most sensitive and visible issues in the American society. At BNL, these regulations are indisputably the most sensitive topic within the ESH arena since environmental releases and the perception of poor waste handling practices were at the heart of the AUI discharge by DOE and in the development of the strong management emphasis on these issues. In light of the high visibility and sensitivity to these issues, BNL management committed to the development of an Environmental Management Program that met all the requirements of ISO 14001, an international organization which has adopted standards for many types of programs, including environmental management.

A key issue within ISO 14001 is the identification of all activities at a facility that are associated with significant environmental aspects. All activities involving a significant aspect are to be managed and controlled to ensure that no adverse environmental impact results. As a part of that program, all personnel whose work involves a significant environmental aspect[2] will be provided specific environmental awareness training relating to their duties.

There are several work activities at NSLS that are involved with our facilities' significant environmental aspects. These activities are:

- Regeneration of process water mixed bed deionizing and Cooling Water System Maintenance
- Machine shop operations
- Photographic dark room operations
- Vacuum pump maintenance
- Electrical/Mechanical Equipment Maintenance
- Experimental Program
- 90 Day/Satellite Area Operation
- Silicon Crystal Etching & Cutting

For each of these activities, job specific training has been developed to ensure knowledge of applicable requirements that should be followed to properly control the significant environmental aspects.

[2] Significant environmental aspects applicable to the NSLS have been defined at BNL as involving any of the following issues:

- Generation of any amount of industrial, hazardous, radioactive, or mixed wastes
- Air or liquid effluents or emissions exceeding defined values
- Storage or use of chemicals or radioactive material above certain thresholds (includes PCBs)
- Backflow prevention
- Spill Potential
- Any soil activation